

# PATENT ABSTRACTS OF JAPAN

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(54) DISPERSION COMPENSATING OPTICAL FIBER

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a dispersion compensating optical fiber capable of compensating wavelength dispersion of an NZ-DSF having negative wavelength dispersion in 1.55  $\mu\text{m}$  band and further suitable for substantially single mode wavelength multiplex optical communications in which a nonlinear effect is restrained.

SOLUTION: The fiber is to be substantially a single mode propagation in wavelength 1.55  $\mu\text{m}$  band, the wavelength dispersion is to be +19 ps/nm/km or more, moreover the loss of bending is 20 dB/m or less and furthermore, the effective core cross section is 85  $\mu\text{m}^2$  or more. In order to obtain such characteristics, for example, when the outside diameter of the central core part is expressed by  $2a$ , the outside diameter of the intermediate part encircling the central core part is expressed by  $2b$ , the difference of the specific refractive index of a clad part and the central core part is expressed by  $\Delta d$  and the difference of the specific refractive index of the clad part and the intermediate part is expressed by  $\Delta e$ ,  $\Delta d \leq +0.35\%$ ,  $-0.5\% \leq \Delta e \leq 0\%$ , and moreover  $3.0 \leq b/a \leq 5.0$  are satisfied.

